

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-10 (cancelled).

11. (allowed) A cylindrical female pipe coupler B having a longitudinal axis 30, said coupler having a spline portion 32 and a female coupling portion 34 extending in opposite directions generally parallel to said axis 30, said spline portion 32 being attachable to a pipe A, said female coupling portion 34 having inner and outer surfaces 36, 38 and a terminal end 42, a sloping cam surface 44 extending from said terminal end 42 in a direction toward said longitudinal axis 30 and back toward said spline portion 32, said cam surface 44 terminating at an intersection 46 with a shoulder 48 that extends from said inner surface 38 of said female coupling portion 34 toward said longitudinal axis 30 so that said intersection 46 is spaced toward said longitudinal axis 30 from said inner surface 38 and is spaced toward said spline portion from said terminal end 42 of said female coupling portion 34.

12. (allowed) The coupler of claim 11 wherein said female coupling portion is displaced radially outwardly of said longitudinal axis from said spline portion, said spline portion having barbed inner and outer surfaces, and said spline portion providing no part of any fluid flow passage through said coupler.

13. (allowed) The coupler of claim 12 wherein said female coupling portion has a cylindrical inner surface 38 and further including a transition portion 54 between said spline portion 32 and said female coupling portion 34, said transition portion 54 extending toward said longitudinal axis 30 from said cylindrical inner surface 38 and having a concave curved inner surface 52, 52a facing in a direction toward said shoulder 48.

14. (allowed) A cylindrical male pipe coupler having a longitudinal axis, said coupler having a spline portion and a male coupling portion extending generally parallel to said longitudinal axis, said male coupling portion having inner and outer surfaces and a terminal end,

said outer surface including a circumferential groove spaced axially from said terminal end and having opposite inner and outer groove sidewalls, a sloping cam surface extending from said terminal end in a direction away from said longitudinal axis and back toward said spline portion to a first intersection with said outer groove sidewall, said outer surface including an outwardly extending circumferential projection adjacent said inner groove sidewall, said projection having a projection outer surface that slopes from said inner groove sidewall in a direction away from said longitudinal axis and back toward said spline portion to a second intersection with a projection inner sidewall, and said second intersection being spaced outwardly from said longitudinal axis farther than said first intersection.

15. (allowed) The coupler of claim 14 wherein said male coupling portion is displaced inwardly toward said longitudinal axis from said spline portion.

16. (allowed) The coupler of claim 14 including a transition portion between said spline portion and said male coupling portion, said transition portion having a concave curved surface adjacent said outer surface of said male coupling portion that faces toward said terminal end.

17. (allowed) The coupler of claim 14 including an elastomeric gasket having a gasket base portion received in said groove and having a sealing portion that is inclined in a direction toward said longitudinal axis and back toward said spline portion.

18. (allowed) The coupler of claim 17 wherein said groove has a groove bottom and said gasket base portion is adhesively bonded to said groove bottom.

19. (allowed) The coupler of claim 17 including a lubricant on said gasket, and a removable protective wrap covering said gasket and lubricant.

20. (allowed) The coupler of claim 19 wherein said wrap provides protection against ultraviolet radiation.

Claims 21-25 (cancelled).

26. (allowed) A pipe joint between a cylindrical male coupler received in a female coupler, said male and female couplers having terminal end portions with cooperating cam surfaces that facilitate insertion of said male coupler into said female coupler, said male and female couplers having cooperating projections that cam past one another when said male coupler is inserted into said female coupler and that engage one another to inhibit longitudinal separation of said male and female couplers, a gasket on said male coupler between said male coupling terminal end portion and said male coupler projection, and said female coupler having an inner surface sealingly engaged by said gasket.

27. (allowed) The joint of claim 26 wherein said male and female couplers have longitudinal axes and said male and female couplers are configured to be articulatable to skew said axes up to at least several degrees when said projections have been cammed past one another and said male coupler is received in said female coupler.

28. (allowed) The joint of claim 1 wherein said male coupler has an abutment engageable by said terminal end portion of said female coupler and said female coupler has an abutment engageable by said terminal end portion of said male coupler, and said abutments being longitudinally-spaced from said projections a sufficient distance to provide clearance for relative longitudinal movement between said couplers when said projections have been completely cammed past one another and said male coupler is received in said female coupler.

29. (amended) The joint of claim [[1]] 26 wherein said male and female couplers are made from extruded plastic strips having opposite strip ends, said strips being bent into a cylindrical shape and welded together at said opposite ends to provide each of said couplers with a longitudinally extending welded joint.

30. (allowed) The joint of claim 26 wherein said male coupler has a cylindrical main coupler portion with a cylindrical outer surface and a male spline extending in an opposite direction from said main coupler portion, and said spline being displaced radially outward from said cylindrical outer surface.

31. (allowed) The joint of claim 26 wherein said female coupler has a cylindrical main coupler portion with a cylindrical outer surface and a female coupler spline extending in an opposite direction from said main coupler portion, and said female coupler spline being displaced radially inward from said cylindrical outer surface.

32. (new) A pipe joint between a cylindrical male coupler received in a female coupler, said male and female couplers having terminal end portions with cooperating cam surfaces that facilitate insertion of said male coupler into said female coupler, said male and female couplers having cooperating projections that cam past one another when said male coupler is inserted into said female coupler and that engage one another to inhibit longitudinal separation of said male and female couplers, said couplers and projections being configured to provide longitudinal and angular relative movement between said couplers when said projections have been completely cammed past one another and said male coupler is received in said female coupler, a gasket on said male coupler between said male coupling terminal end portion and said male coupler projection, and said female coupler having an inner surface sealingly engaged by said gasket.

33. (new) The joint of claim 32 wherein said male and female couplers have longitudinal axes and said male and female couplers are articulatable to skew said axes up to at least several degrees.

34. (new) A pipe joint between a cylindrical male coupler received in a female coupler, said male and female couplers having terminal end portions with cooperating cam surfaces that facilitate insertion of said male coupler into said female coupler, said male and female couplers having cooperating projections that cam past one another when said male

coupler is inserted into said female coupler and that engage one another to inhibit longitudinal separation of said male and female couplers, said couplers and projections being configured to provide longitudinal and angular relative movement between said couplers when said projections have been completely cammed past one another and said male coupler is received in said female coupler, said male coupler having an abutment engageable by said terminal end portion of said female coupler and said female coupler having an abutment engageable by said terminal end portion of said male coupler, and said abutments being longitudinally spaced from said projections to provide spaces for longitudinal and angular movement of said couplers relative to one another.

35. (new) The joint of claim 34 wherein said abutments are concavely curved.

36. (new) A pipe joint between a cylindrical male coupler received in a female coupler, said male and female couplers having terminal end portions with cooperating cam surfaces that facilitate insertion of said male coupler into said female coupler, said male and female couplers having cooperating projections that cam past one another when said male coupler is inserted into said female coupler and that engage one another to inhibit longitudinal separation of said male and female couplers, said couplers and projections being configured to provide longitudinal and angular relative movement between said couplers when said projections have been completely cammed past one another and said male coupler is received in said female coupler, said male coupler having a cylindrical main coupler portion with a cylindrical outer surface and a male spline extending in an opposite direction from said main coupler portion, and said spline being displaced radially outward from said cylindrical outer surface.

37. (new) A pipe joint between a cylindrical male coupler received in a female coupler, said male and female couplers having terminal end portions with cooperating cam surfaces that facilitate insertion of said male coupler into said female coupler, said male and female couplers having cooperating projections that cam past one another when said male coupler is inserted into said female coupler and that engage one another to inhibit longitudinal separation of said male and female couplers, said couplers and projections being configured to

Appln. No. 10/672,543
Amdt. dated August 2, 2005
Reply to Office Action of July 18, 2005

provide longitudinal and angular relative movement between said couplers when said projections have been completely cammed past one another and said male coupler is received in said female coupler, said female coupler having a cylindrical main coupler portion with a cylindrical outer surface and a female coupler spline extending in an opposite direction from said main coupler portion, and said female coupler spline being displaced radially inward from said cylindrical outer surface.

38. (new) A pipe joint between a cylindrical male coupler received in a female coupler, said male and female couplers having terminal end portions with cooperating cam surfaces that facilitate insertion of said male coupler into said female coupler, said male and female couplers having cooperating projections that cam past one another when said male coupler is inserted into said female coupler and that engage one another to inhibit longitudinal separation of said male and female couplers, said couplers and projections being configured to provide longitudinal and angular relative movement between said couplers when said projections have been completely cammed past one another and said male coupler is received in said female coupler, a gasket on said male coupler between said male coupling terminal end portion and said male coupler projection, said female coupler having an inner surface sealingly engaged by said gasket, and said female coupler having an outer surface with an outer surface diameter that is not larger than the outer diameter of a pipe that said female coupler is attached to.